Claims:

Sub a1

1. A data structure, comprising:

a plurality of data frames temporally separated by respective inter-packet gaps (IPGs), each IPG having positioned within it at least a synchronization pattern suitable for delineating a respective data frame.

2. The data structure of claim 1, wherein a length indicative data element is positioned within said IPG, each length indicative data element storing a length parameter associated with a data frame adjacent said IPG.

3. The data structure of claim 2, wherein said length indicative data element comprises a count of a number of double words within said adjacent data frame.

4. The data structure of claim 2, wherein said length indicative data element comprises a count of a number of words within said adjacent data frame.

5. The data structure of claim 1, wherein a cyclical redundancy check (CRC) data element is positioned within each IPG, said CRC data element storing a CRC generated using a data frame adjacent said IPG.

6. The data structure of claim 5, wherein said adjacent data frame is scrambled using a polynomial which is relatively prime with a CRC generator polynomial used to generate said respective CRC indicative data element.

7. The data structure of claim 1, wherein said data frame is scrambled using a polynomial.

8. The data structure of claim 7, wherein said scrambled data frame and the contents of said adjacent IPG are scrambled.

9. The data structure of claim 1, wherein a pointer data element is positioned within said IPG, said pointer data element indicating the position of a next data frame.

10. A protocol suitable for delineating data frames within a communications link, said protocol comprising a plurality of layers including a physical coding sublayer (PCS), said PCS processing a data to be transmitted as a sequence of data frames, said protocol comprising:

receiving a data stream to be transmitted as a sequence of data frames;

inserting, into a temporal region following each transmitted data frame, a synchronization pattern suitable for delineating said data frame.

11. The protocol of claim 10, further comprising:

inserting, into said temporal region following each transmitted data frame, a cyclical redundancy check (CRC) data element generated using the contents of said data frame.

12. The protocol of claim 11, further comprising:

inserting, into said temporal region following each transmitted data frame, a length indicative data element generated according to the contents of a respective data frame.

13. The protocol of claim 10, further comprising:

scrambling said received data included within said sequence of data frames; and

determining whether said scrambled data include a data pattern that may be interpreted as being equivalent to said synchronization pattern; and

in the case of finding such a matching data pattern, inserting an error message into said data frame being formed.

14. The protocol of claim 13, wherein said scrambling is performed using a polynomial which is relatively prime with a CRC generator polynomial used to generate a CRC indicative data element, said CRC indicative data element being inserted into a temporal region following said data frame from which said CRC was generated.

15. A method for transmitting data, comprising:

transmitting, to a physical media dependent (PMD) layer, a sequence of idle control characters;

transmitting, to said PMD layer, a start of frame delineator (SFD) upon detecting the presence of data to be transmitted;

transmitting said received data until an entire data frame has been transmitted;

transmitting, upon the transmission of said entire data frame, an end of frame delineator (EFD) and a termination flag (T-FLAG), said T-FLAG comprising a relatively long synchronization pattern selected to be substantially unique.

16. The method of claim 15, further comprising:

scrambling said data forming said data frame.

17. The method of claim 16, further comprising:

scrambling said scrambled data, said SFD, said EFD and said T-FLAG.

18. The method of claim 15, further comprising:

transmitting, to said PMD layer, an error flag (E-FLAG) upon detecting an arrangement of data within said data frame substantially equivalent to said T-FLAG synchronization pattern.

19. The method of claim 15, further comprising the step of:

transmitting, upon the transmission of said entire data frame, a pointer indicative of the position of a next data frame to be transmitted.

20. A method for receiving data, comprising:

determining data frame delineation points within a received data stream by detecting the presence of a synchronization pattern within said data stream, said synchronization pattern being positioned within inter-packet gaps (IPGs); and

forming data frames for subsequent processing by utilizing said determined delineation points.

21. The method of claim 20, wherein said detection of said synchronization pattern comprises a correlation of data within said data stream to at least an n-bit difference between said synchronization pattern and said reference synchronization pattern.

22. The method of claim 21, further comprising:

discarding all data pertaining to a data frame being formed in response to the detection of an error flag within said input data stream.

23. The method of claim 20, further comprising:

identifying a cyclical redundancy check (CRC) data element proximate said T-FLAG and within a respective IPG; and

utilizing said detected CRC and a CRC generated using a corresponding formed data frame to determine whether said formed data frame has been corrupted.

24. The method of claim 20, further comprising:

detecting a length indicative data element proximate said T-FLAG and within a respective IPG; and

determining whether said received data frame has a length proximate the length

indicated by said length detected length indicative data element.

25. The method of claim 20, further comprising:

detecting a pointer within said data stream proximate said T-FLAG, said pointer identifying a start position of a next data frame; and

determining whether a gap within said data stream exists indicative of the corruption of a T-FLAG prior to the reception of said data stream.

26. The method of claim 20, wherein said data stream is received from a physical media dependent (PMD) layer and said formed data frames are provided to a media access control (MAC) interface layer.